

*Providing Accessible and Quality Education Through Technology:  
Case Study from Universitas Terbuka's MOOCs*

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Abstract

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Education in Indonesia is still facing two major problems. The first problem is the access that includes the availability and affordability. The second issue is about the limitations of teaching staff, infrastructure and good governance. Advances in technology and innovation in the world of information technology has brought a ubiquitous phenomenon which any information, which is required in the world of education, can be obtained instantly, without having to build physical infrastructure of the school. This phenomenon has been utilized by many countries, including Indonesia, to provide educational services in massive, open to anyone, as long as they are connected to the Internet. Through Massive Open Online Course (MOOCs), individuals can follow courses without having to enroll as student in a university or institution. This paper will explore the efforts of Universitas Terbuka (Indonesia Open University) to provide a solution to the limited access to and quality of education by providing various courses for free to the public through MOOCs in the field of Parenting, Public Speaking, ASEAN Studies, Introduction to Moodle, Food Processing, Marketing Management and Distance Education through MOOCs. Following

MOOCs is a new way of learning for the people of Indonesia as it enables universities and institutions to share the best of their knowledge to the people of Indonesia.

*Keywords:* access, quality of education, ubiquitous, MOOCs

## **INTRODUCTION**

Unequal access to information and access to learning opportunities, is one of the triggers to imbalances of power and self-development opportunities (Rohs & Ganz, 2015). This has prompted the emergence of awareness of the importance access to information, including access to information via the internet, for all individuals in the world.

The consciousness to this facts, has prompted the establishment of an open educational resource movement (known as open educational resources/OER) for the entire population of the world, which is then contained in the "Paris OER Declaration (UNESCO, 2012). This movement led to many initiatives utilization of information through information and communication technologies. The aim is that the public will be able to learn and absorb knowledge through a variety of learning resources quality, open and accessible, as long as they can connect to the Internet. Through the use of open learning resources widely, inequality of access to quality information can be reduced.

As an island nation with a population of 255 million inhabitants (Indonesia Central Bureau of Statistics, 2015), Indonesia is still facing two major problems in education. The first problem is the access that includes the availability and affordability.

People spread across various islands in 34 provinces, raises the problem of the learning opportunity. The number of people who never went to school and did not complete primary education is the largest number of Indonesian population as many as 109.912 people (50%) of the total population. Meanwhile, residents who have had the opportunity to learn in college as many as 13,500 people (0.06%) (Indonesia Central Bureau of Statistics, 2015: 254) and 86% of children aged 19-23 years has not continued higher education ([www.kemendikbud.go.id](http://www.kemendikbud.go.id), 2014).

Furthermore, uneven income levels also cause problems for many households to pay tuition fees. Poverty is a major limiting factor in obtaining education (Berlian, 2011).

Distribution of education is one focus of the Indonesian government. Efforts are being implemented, including equalize education through distance education. Universitas Terbuka (UT), mandated to increase the participation rate of Indonesian society specifically for higher education. UT which was founded in 1984, is currently contributing 2.2% of 28% gross enrollment rate of Indonesia higher education.

Currently, UT is serving 396.955 students spread across 38 cities in Indonesia and 28 cities abroad. With distance education systems and extensive reach of the service area, UT has a high potential to be able to serve the people of Indonesia in various fields of knowledge and skills. Distance education system can also address the problem of lack of teachers due to the ratio of the number of students and faculty become bigger. Teachers and students do not need to physically meet in class. Separation between teachers and learners can be bridged by the use of technology (Simonson, Smaldino, Zvacek, 2015: 26).

This paper discusses the use MOOCs to equitable quality education for the entire population of Indonesia. Seven UT's MOOCs were studied to provide qualitative and quantitative data on various aspects. Secondary data from questionnaires filled out by participants of UT's MOOCs in the year of 2014 -2014. Interview with UT's MOOCs instructor conducted to obtain information about the structure of MOOCs.

## THEORITICAL BACKGROUND

### A. Indonesia at A Glance

Indonesia is an archipelago with an area of nearly 2 million square kilometers, a population of 255 million people (Indonesia Bureau of Statistics, 2015) and has more than 17,000 islands and consisted of 230 ethnicities.



[petabesar.blogspot.com/2010/11/gambar-peta-indonesia-indonesia-map](http://petabesar.blogspot.com/2010/11/gambar-peta-indonesia-indonesia-map)

Figure 1: Map of Indonesia

Indonesia is located in Southeast Asia and is a member of the Association of South East Asian Nations (ASEAN) along with Singapore, Malaysia, Vietnam, Myanmar, Brunei Darussalam, Thailand, Philippines, Laos, Cambodia and Timor Leste.



[www.google.co.id](http://www.google.co.id)

Figure 2: ASEAN Countries

One of the important issues related to the huge number of inhabitants is educational equity. Universitas Terbuka (UT) with a distance education system, was set to open wide access for the people of Indonesia to continue their education in higher education. With the number of as many as 396.955 students (www.ut.ac.id, 2016), UT has participated to provide comprehensive services in the field of quality education at an affordable cost.

## B. About Universitas Terbuka

Universitas Terbuka (UT) was established in 1984 to expand access to higher education of Indonesian society. As the only one higher education institution in Indonesia using distance learning, UT has a number of 396.955 students, in 38 cities in the country and 28 cities abroad. With the number of active students more than 350,000, UT classified in "The Top Ten Mega University of The World". UT is a member and founder of "The Global Mega-University Network (GMUNET)". GMUNET founded in 2003 is an open network consist of universities which has more than 100,000 students. (https://id.wikipedia.org, 2016)



[www.ut.ac.id](http://www.ut.ac.id)

*Figure 3: UT's Regional Offices*

In addition to domestic, UT students also were in 28 cities outside Indonesia with the number as many as 2,682 students. Here is the distribution of UT students abroad



[www.ut.ac.id](http://www.ut.ac.id)

*Figure 4: UT's Students Abroad*

This is very challenging for Universitas Terbuka, since the growing demand in China, India and Indonesia, it is estimated an additional 10 million teachers will be needed (CISCO, 2010). The responsibility of UT as a provider of education is to serve the people of Indonesia who are difficult to attend regular class due to distance and time constraints.

### **C. Distance Education**

Advances in technology and innovation in the world of information technology has brought a ubiquitous phenomenon which any information, which is required in the world of education, can be obtained instantly, without having to build physical infrastructure of the school. This is considered as a new educational paradigm made possible in part by the affordances of digital media (Cope, 2008:576). This phenomenon has been utilized by many countries, including Indonesia, to provide educational services in massive, open to anyone, as long as they are connected to the internet. A **massive open online course (MOOC)** is an online course aimed



at unlimited participation and open access via the web (<https://en.wikipedia.org,2016>). Through MOOCs, individuals can follow the lessons without having to enroll as student in a university or institution.

In the last 8 years, MOOC has been a new wave in online learning. MOOC is one of the innovations arising from the movement of Open Educational Resources (OER) in 2008. OER is defined as “...any type of educational materials in the public domain, or released with an open license, that allows users to legally and freely use, copy, adapt, and re-share.. The spirit of sharing information widely, free and good quality which is the forerunner of the emerging courses open for free all over the world, with the Massachusetts Institute of Technology (MIT) as the pioneer use of learning resources education that is open to anyone with the launch MOOCs in 2011 (UNESCO, retrieved from <http://www.unesco.org>). Until now, already 72 institutions in the world which organizes MOOC program of free and paid (moocs.go: 2016).

In distance education, has long been known for their online college distance, but with limited access. In this kind of services, every participant must be registered as a student in a specific school/university, only then they can be a student and follow some courses. MOOC is a new variant in the distance education. Refers to the abbreviation M = Massive, O = Open, Online and O = C = Course, MOOC is an online course that is open and can be followed by unlimited number of participants. Because is not limited, MOOC can provide an opportunity to anyone around the world to interact with each other. Interactions can occur between the participants from around the world and participants with the teachers.

#### D. Universitas Terbuka's MOOCs

MOOCs Universitas Terbuka launched on March 13, 2014 as part of a global movement “Open Education Week”. For UT, MOOCs program is a realization of its mission to build a culture of lifelong learning. In addition, MOOCs is an opportunity to introduce UT to the wider community with the provision of quality knowledge for free. This is in line with research findings that offering MOOC courses can improve the image and profile of an institution (AHEAD, 2014).



*Figure 6: UT's MOOCs' Icon*

When UT's MOOC was launched, there are 5 MOOC programs offered: (1) Public Speaking, (2) Marketing Management, (3) Distance Education, (4) Arts, Food Processing, and (5) English for Children. On its way, English for Children, is no longer offered and UT opened new courses i.e. Introduction to Moodle 2.9, Parenting and ASEAN Studies. UT's MOOCs are now still using Indonesian language, considering that up till now they are dedicated to all the people of Indonesia.

UT MOOCs is developed by using open source platform Moodle 2.9 on the consideration that the lecturers and tutors previously have using the similar platform for their formal courses. Their capabilities and sufficient skills in using this platform is believed will facilitate their interaction with MOOC’ students as well. (Prasetyo, 2016).

**a. Development – Evaluation Stage**

UT MOOCs development began in 2013, starting with the identification of programs that will be developed. The program is selected from the courses which already available online. The approach used in developing MOOCs programs are basically the same to the development of print and non-print teaching materials, which is called Course Team Approach. Lecturers, instructional developers, IT staff and media experts, jointly developed MOOCs. Lecturers responsible for providing the MOOC’s content, create assignments, find open educational resources (OER) that are relevant to the topic, making the subject for discussion, manage discussion forums, answering questions from participants and assess learning outcomes. Instructional developers in charge of designing learning strategies and structures MOOCs, while media experts assigned to help lecturers choose media and create attractive appearance of the MOOCs. IT staff helps lecturers upload MOOCs material into the Moodle LMS platform. Here is a summary of the structure of the MOOCs.

Table 1: Course Structure of UT’s MOOCs

<i>Course Structure</i>	<i>Public Speaking</i>	<i>Distance Learning</i>	<i>Parenting</i>	<i>Marketing Manag.</i>	<i>ASEAN Studies</i>	<i>Introduction to Moodle</i>	<i>Food Processing</i>
<i>Number of lecturers</i>	1	1	3	2	3	1	2
<i>Length of course (weeks)</i>	8	8	8	8	8	8	8
<i>Numbers of assignments</i>	1	3	1	2	2	3	3

<i>Course Structure</i>	<i>Public Speaking</i>	<i>Distance Learning</i>	<i>Parenting</i>	<i>Marketing Manag.</i>	<i>ASEAN Studies</i>	<i>Introduction to Moodle</i>	<i>Food Processing</i>
<i>Numbers of OERs</i>	3	4	6	5	4	8	3
<i>Numbers of discussions</i>	4	4	3	4	4	4	4

MOOCs that have been developed, evaluated jointly by members of the development team, prior to launch. Revision were carried out based on results of evaluation related to content, instructional design, learning structure and OER.

Apart from the development team, the evaluation was also conducted by the participant by filling out questionnaires from each MOOCs. From the amount of 310 questionnaires, several information related to MOOCs have been analyzed. Most of the participants (57.1%) are junior/senior high school graduates. This data indicates that UT MOOCs can be an alternative solution for participants to broaden their knowledge and skill.

In the aspect of purpose to join UT’s MOOCs, the data shows that 71.9% of participants stated that they need to gain knowledge, while 26.5% need to have certificate from the program. Another aspect that can be explained is 63% participants’ stated UT’s MOOCs is meet their expectation, while 32.6% of the rest stated that UT’s MOOCs can partly meet their objectives.

Basic principles of implementing MOOCs is because this program can be followed by large numbers participants. This situation then drive UT to create the more ideal MOOCs which is have a low level of interaction between the lecturer. Participants are directed to be more independent in their learning process. Participants are also be encouraged to interact with the community and take advantage of a variety of other open learning resources. The role of the lecturer/tutor in MOOCs are as moderator, especially in directing the discussion.

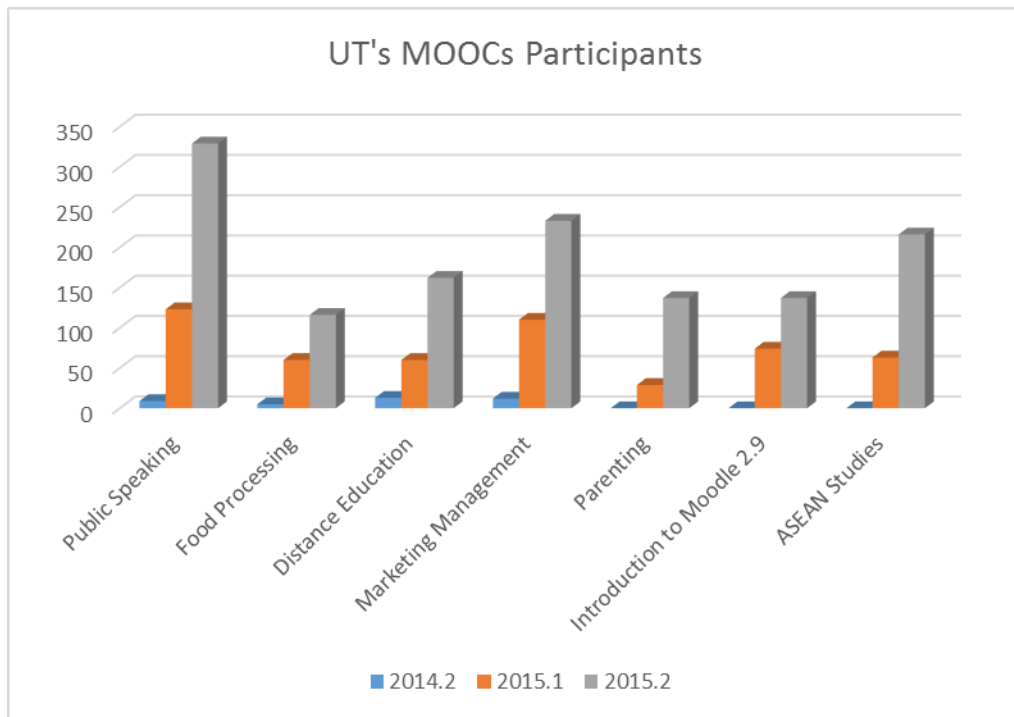
Learning Management System (LMS) used in delivering MOOCs is Moodle 2.9 platform. Thus, the MOOCs design still has a high level of interaction with the teacher/tutor (driven by tutor). This situations may hamper the participants' learning speed since teachers have to wait for response from the participants. In future, it is expected that UT will be developed a less-tutor dependent courses , so it can be used independently by the participants, with minimal supervision from the tutors.

**b. Students Registration & Record System**

Registration of participants is done through UT website at [www.ut.ac.id](http://www.ut.ac.id) on MOOCs menu. Data requested from the participant's name are city of residence and email address. More detailed data related to gender, occupation, home address, age, until now there has not been required for considering the openness of the program.

UT student data has been stored in special applications ie Student Record System (SRS). Use of SRS application is closely related to tuition, teaching materials, tutorial fees and charges as well as the graduation exam. In the future, MOOCs participant data is not meant to be stored in the application since MOOC participants do not need to be listed as UT student and not associated with any cost. Data of MOOCs participants is now treated differently and recorded in Moodle application and can be exported to be excel file. The data is managed by the Institute for Research and Community Service since MOOCs is one of UT's service to the community. Table 2 below shows a tendency of UT's MOOCs participants.

Table 2: UT’s MOOCs Participants: 2014 – 2015



**c. MOOCs Management**

During development stage, UT’s MOOCs are under supervision of Departments/Study Programs. After being launched, UT’s MOOCs management is now under the coordination of Research Institute and Community Service while content supervision is remain to be the responsibility of departments/Study Programs .

### **Conclusion and Recommendation for Future of UT's MOOCs**

Recommendation for UT's MOOCs are as follows:

1. In the future UT's MOOCs can be develop as a model for an ideal MOOCs with the more intensive cooperation among the development team.
2. Lecturers are encouraged to utilize MOOCs as a tool in improving the quality of online learning materials
3. Further research on how participants learning through MOOCs is needed especially to describe their learning style.

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